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BRADLEE VAN BRUNT, Manager and Editor

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Articles are arranged under the following classifications:

Railroad Construction.
Mining and Stripping.
Cement, Rock, Clay and Gravel Plants.
Road and Street Construction.
Sewer and Ditch Construction.
Basement and Miscellaneous Excavation.
Irrigation, Drainage and Miscellaneous Canal Excavation.
Dredge Work.
Electric Excavating Machinery.
Field Notes.
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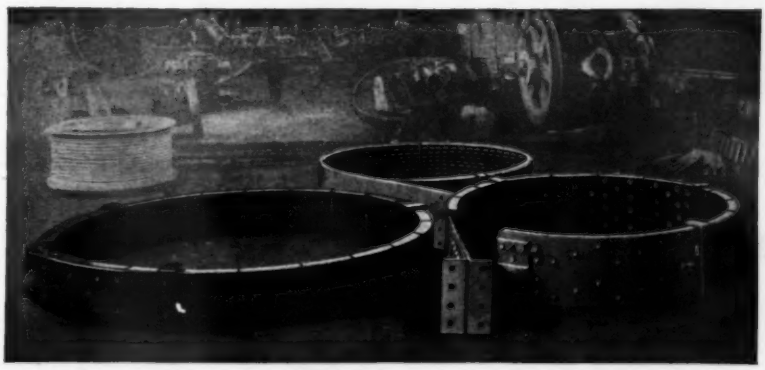

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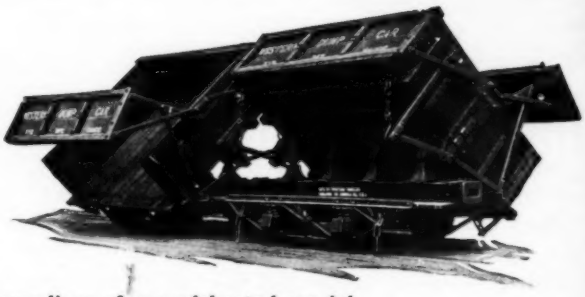

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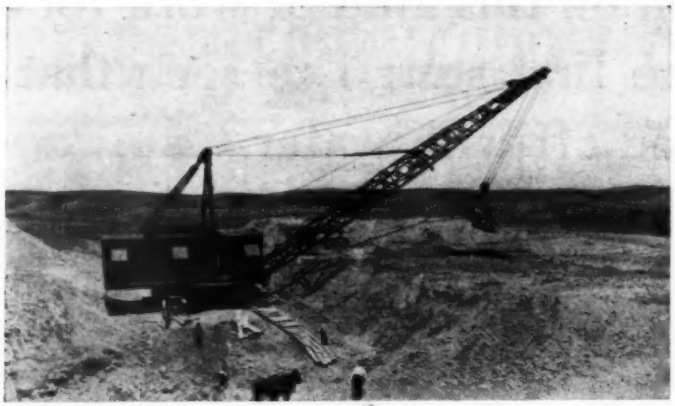

Westinghouse

Cutting Costs on a 45-mile Canal

THIS 1,500,000 cubic yard ditch job on the Sun River Irrigation Project, Montana, was cleaned up in two seasons with two Westinghouse-driven Bucyrus dragline scrapers. Some interesting cost figures are available. Electric drive was determined upon on account of the high cost of coal.

The larger machine is a Bucyrus class 24 with 100-ft. boom and 3½-yard bucket. The other is a class 20 Bucyrus with 85-ft. boom and a 2½-yard bucket.

Machines were hauled to the job knocked down and were erected in the field.

Costs Here's what each machine accomplished in cost-cutting in the three classifications of material handled:

TABLE 1—Excavation Costs in Cents Per Yard with Class 24 Electric Dragline Valued at $36,326.63.

Item	Class 1, 333,689 cu. yd.	Class 2, 23,319 cu. yd.	Class 3, 39,045 cu. yd.
Interest on investment	0.81c	1.21c	2.25c
Preparatory expense	1.33	1.99	3.73
Plant depreciation	3.63	5.41	10.12
Executive	0.89	1.24	3.00
Labor	5.98	7.85	21.03
Electric power	0.73	1.03	1.82
Supplies	1.13	1.67	6.72
Miscellaneous	0.16	0.15	0.29
Total	14.66c	20.55c	49.05c

TABLE 2—Excavation Costs in Cents Per Yard with Class 20 Electric Dragline Valued at $20,957.13.

Item	Class 1, 410,747 cu. yd.	Class 2, 4,180 cu. yd.	Class 3, 9,546 cu. yd.
Interest on investment	0.44c	0.76c	1.61c
Preparatory expense	1.12	1.20	2.52
Plant depreciation	1.86	3.22	6.79
Executive	0.71	1.31	3.14
Labor	3.70	8.22	15.77
Electric Power	0.78	1.78	2.80
Supplies	1.29	1.53	7.50
Total	9.90c	18.02c	40.13c

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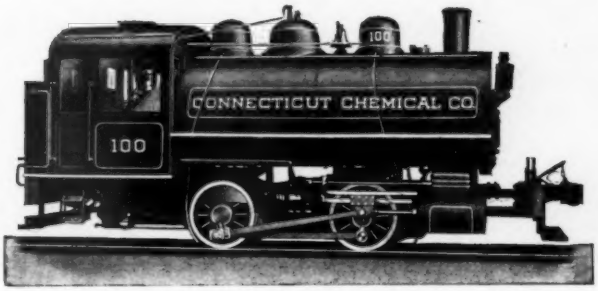

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Bucyrus class-7 dragline excavator uprooting trees and then excavating a ditch, through soft peat, filled with stumps and boulders, on the new drainage ditch north of Bridgeport. First 2000 yards of the ditch was practically all stone. Boulders weighing as much as 5 tons were chained to the bucket of the class-7 and pulled out. This view illustrates the work well.

This view shows the work done by the class-7 Bucyrus dragline on their earliest stages of the work. Note the tough digging and the true slopes of the ditch. The ditch was through a swamp three miles long. The purpose of the ditch is to drain this swamp to keep from coloring the water for the city of Bridgeport water supply. This is one of the first instances of swamp ditching with a dragline excavator through soft peat. In one place this peat was 50 feet deep.

The Excavating Engineer

Vol. 13 APRIL 1917 No. 7

Small Dragline Succeeds in Tough Ditching in Peat Bog Near Bridgeport, Conn.

Description of the Bridgeport Hydraulic Company's Work on which a Class-7 Bucyrus Dragline is in Operation.

THE Bridgeport Hydraulic Company which controls the city's water supply, under a perpetual franchise, is doing a unique and interesting piece of dragline excavation.

The main water shed for the big new reservoir lies twelve to fourteen miles north of Bridgeport; and the present work consists in draining a swamp and in joining two valleys which are separated by a low divide. About six square miles additional is thus added to the territory which supplies the Trap Falls Storage Reservoir.

Course of Ditch

Beginning at Boys Half River the ditch runs southeast 16,000 feet, until it joins the Means Brook Shed. The first 400 feet runs through a rocky foundation. Then the channel strikes a peat bog for about a mile. A slight rise of land for 2,500 feet intervenes; and then comes another long stretch of extremely soft material until the ditch joins Means Brook. The whole region is heavily wooded with large maple and white pine; and most of the route of the ditch is covered with a dense growth of underbrush. The last mile follows the course of a brook. This entire ditch has been finished except about 1,000 feet in the divide.

Small Dragline Selected for Job

Mr. Samuel Senior, the superintendent, had obtained remarkable results with a class-14 Bucyrus dragline on similar work two years ago. He was then digging a ditch a mile long and 18 feet deep to divert the flow of water from the Aspetuck River to Cricker Brook. A description of the early stages of this work appeared in our issue of June 1913. He therefore purchased for the present job a class-7 Bucyrus dragline. No heavier machine would have been able to stay on top of such soft ground.

Hard Work in Rocky Cut

In marked contrast to the great bulk of this job, the first two hundred yards required much blasting; and the material taken out was practically all stone. Boulders weighing as much as five tons were chained to the dragline bucket and pulled out of the cut which led into the upper stream. One of our illustrations shows how rough this part of the work was. The main part of the work, however, was concerned with mushy ground filled with roots and stumps.

Forced to Dig Wide Shallow Ditch

According to the dimensions, about 112,000 cubic yards were to be removed, but the nature of the material handled made it necessary to take out nearly twice that amount before the ditch was satisfactory. It was six feet wide at the bottom and about 54 feet wide at the top. This unusually shallow slope was required, because the mud kept pushing back into the ditch, and the added weight of spoil on the banks greatly increased the pressure at the middle. Robert Adams, the operator, soon discovered that he had to dig at least four feet deeper than the specifications required in order to have the ditch of proper depth. In this excavation, it was necessary also to look to the future, for it will be impossible ever to get at this ditch again by machine. Both sides are so covered with spoil, composed of mud and rocks that no land excavator could be moved near the ditch.

Working ten-hour days, Mr. Adams and his five pitmen were able to average 100 lineal feet per day. This meant moving from 800 to 1000 cu. yds. No records for quantity were made, but it is probable that few if any small draglines have ever worked in such difficult material.

Getting Rid of Trees

As the machine backed into the swamp, several men went ahead and bored holes into the largest trees. These were then blown up with dynamite. However, all trees under one foot in diameter were simply uprooted from the ground by the dragline as it moved along. In many cases, a mass of roots five feet in diameter was pulled up along with the tree.

Fig. 1. Finished cut, 10 feet bottom width, 100 feet top width, 20 feet deep; 5 feet of rock on the bottom had to be blasted here. Note slopes, every inch of which was done by the dragline. The completed ditch was a mile and one half long with about 150,000 yards of excavation. This ditch diverted the water from the Appetuck River to Cricker Brook watershed.

Fig. 2. Another view of the ditch showing a class-14 handling material ordinarily considered impossible for a dragline, boulders, stumps, and even tree trunks.

Fig. 3. Class-14 dragline making a first cut through the peat swamp. This consisted of four feet of peat overlaying gravel. The machine is shown working in six feet of water and making 12,000 cubic yards per day. The ditch was made in two cuts.

Dragline Operation on Appetuck River Ditch, Bridgeport Hydraulic Company

The mud on which the machine travelled was often 8 feet deep. No horse could move in it. Therefore all coal for the dragline had to be carried from higher ground in cement bags by the men. The dragline itself operated most of the time on brush. At several points, however, they had to use logs a foot in diameter and 30 feet long. These were spaced two feet apart and a track laid on them.

Following a Crooked Stream

In following the course of the creek, many crossings were necessary. In one place thay had to cross this crooked stream three times in 500 feet. Fortunately they needed only a few logs with which to level up, as the stream was shallow. However, a great deal of mud was washed into the ditch by the creek; and they had to go several feet below the grade level to allow for this.

Deep Cut Through Rocky Divide

The swamp cut on both sides of the divide recently has been finished, and Mr. Adams is now cutting through a rocky ledge which has a maximum height of 30 feet at the top of the divide. Through snow and zero weather he has plugged away, having (and needing) no more tools than two Ingersoll Rand steam drills and his trusty old Bucyrus dragline. He first strips off the overburden for 800 or 1,000 feet down to rock, leaving a very steep bank. Levelling off one pile of spoil, he next runs the dragline back on one side to begin the rock excavation. Then he drills one day and cleans up the next. The solid rock runs from 10 inches to 9 feet in thickness. It is full of seams and drills poorly. Also much of it is soft and will not shatter when he shoots it.

This cut will be finished in about two months, when the Bridgeport Hydraulic Company will put in concrete sides, cover it over with a concrete slab and then allow the steep banks gradually to cave in. This will make, in effect, a tunnel aqueduct 2,500 feet long and about 10 feet in diameter. Mr. Senior figures this is about as cheap as making an excavation wide enough to prevent slides.

Fig. 4. First cut on the same ditch about ¼ mile above Figure 3. The dragline is now out of the peat, in heavy digging consisting of cemented gravel and boulders.

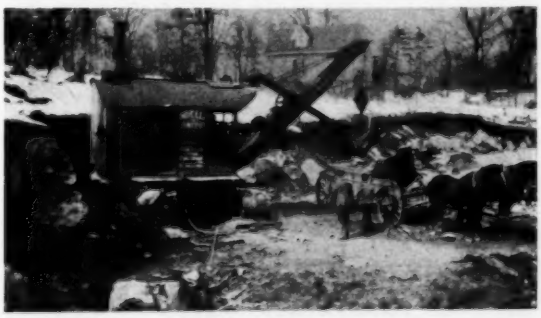
Dragline Cheapest Method

The job, completed, will involve the expenditure of from $30,000.00 to $40,000.00, an apparently large amount for the quantity of material involved, yet Mr. Senior, from his years of experience with steam shovels, says he would not touch this job for twice the amount with any other method. He says the dragline is the only machine for soft ditching.

Fig. 5. Class-7 Bucyrus dragline pulling out boulders on the new drainage ditch. Note the chain attached to bucket for this purpose. This machine took out boulders weighing as much as 5 tons.

Heavy Basement Excavation in New York

The photograph which we publish herewith, illustrates a piece of work which Indelli and Conforti are at present doing at University Ave. and 175th Street, New York City. The contract calls for the excavation for a basement of a five-story apartment house with about 10,000 cubic yards of material to be moved. The steam shovel, which is used is a Bucyrus 14-B with a ⅜-yd. dipper, is loading an average of 150 2-yd. wagons per day. This output is kept low by the large number of boulders which hinder better progress. Many of these boulders are higher than a man and one has been encountered which is nearly as big as the shovel itself. Most of the larger ones as may be seen from our view, are lifted aside by means of a chain sling. Charles L. Strader is running the shovel and Frank Divino is firing.



Indelli & Conforti's 14-B Bucyrus handling boulders at University Ave. and 175th St., New York. This view does not do justice to the size of these boulders, most of which average as high as a man and one has been encountered nearly as large as the shovel itself.

Digging loose rock. Rocks too large to be handled in bucket are snaked over the bank by dragging bucket along the ground and swinging the machine.

Casting over the hillside to the revolving shovel below.

During the first few days of operation showing the dragline loading dump cars.

Another view showing the machine loading dump cars.

These two views give a good general idea of the quarry. One horse, 1½ yard dump cars are loaded by hand. After a 200-foot haul, they are dumped from a platform into hopper cars and the material is carried from thence to the plant. This method of operation will soon be replaced by a big Bucyrus steam shovel.

The Bethlehem Steel Company's Class-7 Bucyrus Gasolene Driven Dragline Mounted on Caterpillars Stripping the Bethlehem Quarry, South Bethlehem, Pa.

Stripping a Limestone Quarry with a One-yard Gasoline Driven Dragline Excavator

The Bethlehem Steel Company are using a one-yard gasoline driven dragline excavator mounted on caterpillar traction for stripping their Bethlehem quarry. A description of its operation

EARLY last spring the Bethlehem Steel Company opened up another of a series of limestone quarries which they are developing in order to obtain material for fluxing purposes in their steel plant. This quarry, now known as the Bethlehem Quarry, was formerly the Chapman Quarry. It lies north of the Lehigh River and Canal between Bethlehem and Freemansburg, Pa., on the Central Railroad of New Jersey.

This quarry covers an area of 140 acres comprising for the most part a large hill. At the present time the rock is being loaded by hand into one-horse dump carts holding about half a cubic yard each, as shown in one of our views.

The loading in the quarry is all piece work, three men being used to a cart and an average of twelve carts being in operation. The rate which applies is 15c per cart and in a good average day's run one gang of three men will load about 65 carts in ten hours' time. The carts haul the material about 200 feet where an incline is climbed to a platform from which the rock is dumped into steel hopper cars. From here the limestone is taken by railroad to the steel plant five or six miles distant, anddumped on to a stock pile.

The company has recently purchased two large Bucyrus steam shovels, one of which is to be used in this plant and another in their plant at McAfee N. J. They will also build an up-to-date crushing plant at each quarry which of course will increase their output greatly.

Climbing a 30 per cent grade under its own power.

The dragline on its way up the narrow steep and winding path. It is shown clearing away a slide which had blocked its path.

The gasoline dragline is the first of this new equipment and it will be used exclusively for stripping the rock. The machine was erected at the foot of the hill, which at this point is about 100 feet in height, and was moved under its own power about half way up the hill where it started operations. This climb was over a narrow winding road with three sharp turns that would have bothered a horse and buggy. At times this road ran very close to the edge of the hill. In one place it was necessary to devote a half a day to clearing away a slide which blocked the road. Except for this it was not necessary even to pause to level off in front of the machine, and the climb even in the steepest part was accomplished with ease. The installation was under the supervision of Chas. Flynn, the representative of the manufacturer.

The dragline is a class-7 Bucyrus equipped with a 42-foot boom and a one-yard bucket. It is mounted on caterpillars and is driven by 60 H. P. 4-cylinder gasoline engine. The fuel used is kerosene. About seven gallons is consumed per hour. This is taken from a tank near at hand and carried to the machine by hand. The engine is run for about 15 minutes each day, on gasoline until the carburetor is heated up.

(*Continued on Page 262*)

Mining Kaolin with a Revolving Shovel

How the Illinois Kaolin Company's Experiment Proved Highly Successful

THE plant of the Illinois Kaolin Company is located about six miles from Anna, Illinois, on the Mobile & Ohio Railroad. The property consists of about 600 acres of which ten have been prospected. The Kaolin exists in a very pure state, in a bed about 100 feet thick with about 20 feet to 30 feet of overburden, which consists of a sandy gravel with no boulders, very easy to dig.

The contour of the land is quite hilly and the bed of clay follows this contour which does not make steam shovel work the easiest thing in the world. The plant has been in operation for about nine years. The original method of mining the clay was to sink a shaft, timber it to prevent caving, and when the clay strata is encountered to mine it by hand, hoisting the clay to the surface in buckets. Three years ago this company, contrary to the recommendations of many experts, decided to attemp. the steam shovel method of operation as they felt that this would be considerably less expensive and more satisfactory in every way. Consequently, a second-hand model-G Marion steam shovel was purchased as an experiment. This experiment proved so successful that early last spring the company bought a 14-B Bucyrus revolving shovel for the work.

The clay is tough and plastic in consistency and when newly mined, has very much of the feeling and appearance of putty. Great care must be taken to keep the face of this material free from foreign matter. Consequently it is necessary to keep the stripping operations well in front of the mining. The shovel dipper is equipped with a cutter-blade, as the clay must be dug in rather thin slabs ranging from 4 to 6 inches in thickness, since for convenience in shipping, it is cut into pieces weighing about 30 to 40 pounds a piece.

An indication of how much care must be exercised in keeping foreign matter from the clay bed in order not to lower its quality, is that after each rain in order to be certain that small pieces have not been lodged on the face of the material, a slice about a quarter of an inch thick is shaved off by hand. This is another reason why a dipper lip is used instead of dipper teeth as in the latter case, it would be necessary to cut to the bottom of the grooves made by the dipper teeth and thus waste an unnecessary large amount of material besides necessitating a needless amount of labor.

Mining kaolin in the plant of The Illinois Kaolin Company. 14-B Bucyrus revolving shovel in operation.

Showing the face of the kaolin. The shovel sliced this off in thin slabs from 4 to 6 inches in thickness.

Since the 14-B Bucyrus shovel has been installed, the output has been considerably increased and the old shovel has been moved to the upper level for use in stripping.

Now they find that the old shovel can't keep pace with the 14-B, so a 70-C Bucyrus has been purchased for the stripping.

Owing to an increasing demand for their product, electric lights were installed the first of the year, and after a month's experience they found that their night performance nearly equals the day output.

The current is furnished by the Central Illinois Public Service Co., at Anna, 5½ miles from the mine. Eleven General Electric form L 500 C. P. flood lights are in service. Nine of these lights are stationed on poles from ten to twenty feet in height and can be adjusted to throw light up or down, also to right and left. These lights are effective for a distance of about 2,000 feet, but on account of curvature of tracks and the necessity of perfect lighting for night work, this number has been found advisable. Two of these lights are close range or non-focusing and are attached to long cords so that they can be changed or moved instantly. These are used in connection with the shovels. The other lights are of the straight-away type and are used to best advantage at ranges of from 100 to 500 feet.

The 14-B was originally served by one locomotive with two 4-yard cars, now they have five Davenport locomotives and 15 4-yard Western and 12 Continental dump cars serving all three shovels.

The 14-B is operated by E. F. Reed. Mr. A. A. Fasig is general manager and secretary of the company.

Did Your Dragline Ever Break Through the Ice?

This One Did, and Here is How It Was Rescued

It happened when the Winnipeg Aqueduct Construction Company put in one of their river crossings under the Falcon River last winter on their Winnipeg Aqueduct contract. They were using one of their class-7 dragline excavators for this work.

The dragline slipped off her pads, when crossing the Falcon River and broke through the ice.

Mr. Wm. Smaill describes this occurrence as follows: "A heavy fall of snow early in the fall kept the frost out of the ground and with very little blasting we were able to do fair work, this may be a record for cold dragline work as we had it down to 52 below. Bringing the machine back across the ice in the river, when right at the shore and almost across, she slipped off the rollers and pads, and the jar broke through the ice and she settled in about 7 feet of water. The river bottom fortunately was hard clay on rock.

The method Ben Olson, the foreman in direct charge of the work at this point, used to get her up was as follows. At each of the corners four holes were chopped in the ice and timbers sent through to the bottom of the river. These immediately froze in, the tops were levelled off, timbers laid across on them and jacking of the machine carried on from these points.

When the dragline was raised clear above the ice, water was allowed to freeze under her, and planks placed on the ice, on which were placed her rollers. She was then lowered on to these and pulled herself ashore." Four 15-ton ball-bearing jacks were used in lifting and lowering the dragline.

The photographs we reproduce herewith were sent us by Mr. Smaill.

How the dragline was raised. See Text.

Changing Surface Ditch Around Canisteo Pit, Mesabi Range

Digging a drainage through the wooded country. How big boulders were handled. How a difficult problem was solved in moving a dragline excavator, after job was finished, to a mine loading track for shipment.

ALTHOUGH the actual work of digging the drainage ditch was interesting, the most unusual and instructive feature of this job was how the contractor, J. R. Swigart, got his dragline off the work and on the siding for re-loading.

The Canisteo Pit at Coleraine, Minn., on the Mesabi Range, is one of many owned and operated by the Oliver Iron Mining Co., a subsidiary of the United States Steel Corporation. This pit is so situated as to require a ditch on the original surface around part of the pit, in order to catch and divert the surface drainage. The contract which was awarded to Mr. Swigart by the Oliver Iron Mining Co. was for changing this surface ditch. This called for a ditch 3,200 feet long with 35,000 cubic yards of excavation.

The material was a mixture of clay, muskey, sand, gravel, and boulders. The ditch was 8 feet wide on the bottom, 3 to 22 feet deep and had a slope of one on one. The machine used was a class-14 Bucyrus dragline excavator with a 60-foot boom and a 2-yard bucket.

Work was started about July 28, 1916, and was finished September 5th, working one 10-hour shift per day.

How Boulders Were Handled

The only feature connected with the actual operation that might be considered at all out of the ordinary run of ditch jobs, was the method used in handling the boulders. Approximately 100 large-sized boulders were encountered and chained out, and seven were shot. Figure 3 shows clearly the method of chaining. A sling was made up of three pieces of ½" chain fastened to a shackle, which was inserted in one of the links of the dragline chain on the bucket. The three loose ends were fastened to another piece of chain which had a hook on one end. This piece was slung around the boulder. This sling works very well for round boulders, but is subject to the disadvantage common with all chain

Fig. 1, Class-14 Bucyrus dragline in an eleven-foot cut handling boulders. The boulders on the left are fair samples of how thick they ran and how they were placed. Canisteo Pit is a thousand feet directly back of the machine. This view gives a good idea of the country.

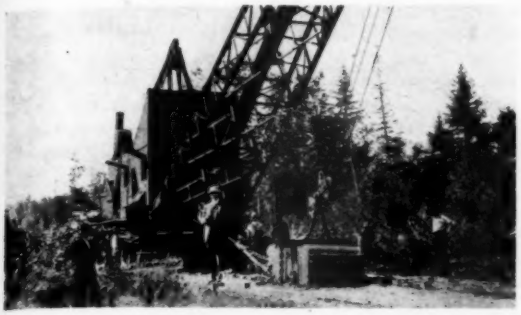


Fig. 2. Moving dragline along road from siding to work 1½ miles. Roy Salsich, district superintendent, O. I. M. Co., to left of bucket, and H. Deahl, chief engineer, to right.

slings; namely, the holding chain must be slung around the point of greatest diameter. This often necessitates digging down around the boulder in order to get the chain in a proper place, thus consuming considerable time.

The Operation

The dragline was mounted on skids and rollers which in turn ran on pieces of fir timber 6″x8″x14′. No trouble was experienced during the operation as there was little wet weather.

Besides the foreman, dragline engineer and fireman, four to six pitmen, a watchman and one team were employed. Water was furnished by the Oliver Iron Mining Co. from their pumping stations one mile away. Coal was hauled from a railroad siding 1½ miles distant.

As stated the interesting feature of the job was the way Mr. Swigart solved the problem of getting from the job to the siding where the dragline was loaded for shipment. This is illustrated in Figures 5 and 6. The machine finished digging one mile from the siding on which it was taken on to the work. Bad hills and rough, wooded country made it unwise to attempt to move the machine back here for

Fig. 4. View of Canisteo Pit from point where incline was dug, showing pumping station which supplied water for the machine.

reloading. This point was 400 feet from the edge of Canisteo Pit, and the intervening ground was more favorable for this purpose. The track, however, to which this machine had to be taken for loading

Fig. 6. Dragline digging its way down. This view was taken when machine was half way down, making a fill ahead of itself to complete the incline.

on to cars, was the mine loading track on the first bench of the pit. This was thirty feet below the ground surface. The problem was solved by having the dragline build an incline for itself to the first

(*Continued on Page 258*)

Fig. 3. The dragline at starting point. Clearing through the woods through which machine was moved to work. The hill just behind the tank wagon has a 12% grade.

Fig. 5. A part of Canisteo Pit showing dragline at top center, starting to dig its way down to loading truck on the first bench. A steam shovel and a train may be seen on the third bench and a shovel on the fourth bench.

The Excavating Engineer

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THE
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Bradlee Van Brunt, Manager and Editor
South Milwaukee, Wisconsin

Construction Outlook

Although the abnormally high prices demanded for practically all material entering into construction work, together with the further hindrance of the difficulty in securing early or prompt deliveries of such material, has proven and will continue to prove a very potent influence in checking new construction work, there is no question but that the settling of the railroad strike and the Adamson bill will result in new work during the forthcoming season. Authorities are nearly unanimous in predicting that the 5% increase in freight rates will be allowed. There is undoubtedly a large amount of new construction so urgently required that all considerations of price and delivery must be pushed aside for the present. We feel that there will very likely be an increased activity in construction in the near future.

What Are YOU Going To Do?

The following letter has been received from one of our Spokane subscribers. Although comment is hardly necessary, we cannot refrain from publishing it, with the confidence that the spirit of this letter may stir a similar spirit in the heart of another true American. This is but one of several such letters received by us.

Spokane, Wash., March 12, 1917.

The Excavating Engineer Publishing Co.
South Milwaukee, Wis.

Gentlemen:

Your Editorial, "THE CRISIS," March. I am fifty-seven years old but have been on the office end of railroad construction for twenty years, can fill any position along construction lines, except direct application of steam or electricity, can fire for steam, or handle a gun, and in case of war want to serve the United States, if my services can be utilized, will go anywhere, and will serve wherever placed, no matter what the hardships are. Kindly tell me what and how to go about it. I am now secretary of a large investment company, so am not out looking for a job. Thanking you for your information, I beg to remain loyally yours.

As this indicates, we published in our last number an editorial in which we endeavored to point out as far as we were able to do, how serious is the present crisis in which our government finds itself. We endeavored to show how contractors can best place their knowledge at the service of their country when their country calls.

Shortly after his return from Germany, Ambassador Gerard is quoted as saying, "When I came back to this country, it was a positive shock to me to find in the two years in which the world has been on fire that we have done nothing to prepare for even a reasonable means of national defense. There is only one thing—universal military service or universal training. That nation that stands opposite us today, has probably not less than 12,000,000 men under arms. I have seen the Germans take prisoners in one afternoon more men than there are in the entire United States Army. Does not it seem to you ridiculous that the two states of New York and New Jersey should have more chauffeurs in them than there are soldiers in our army?"

As Mr. Gerard says, there is only one way in which we can assure security in the years to come, and that is by the immediate adoption of a thorough scheme of universal military service. Even though this were put into effect tomorrow, results would not be felt for some years to come. In this present crisis we must act now before it is too late. There are thousands of contractors and engineers all over the country who can be of service in case of war. The War Department has provided for a commission as reserve line officers for men who have had experience along many different lines. We would be glad to procure information for anyone interested or to put them in touch with the proper authorities from whom such information may be obtained. It is up to you to act.

Changing Surface Ditch Around Canisteo Pit

(*Continued from Page 257*)

bench. This was done by digging and wasting half way down, and filling ahead of itself the rest of the way, taking the material off the bank for this purpose. The grade was approximately 12%. Figure 6 illustrates this well, the machine is here shown half way down.

The job was done under the personal supervision of Mr. Swigart, to whom we are indebted for the photographs and the above information. John Knott operated the dragline.

· FIELD NOTES ·

QUESTIONS pertaining to the operation, maintenance or repair of excavating machinery will be answered through this column. Address, Field Note Department, Excavating Engineer, South Milwaukee, Wisconsin.

Handy Extras Around a Contract Job

There are two pieces of equipment that every contractor using medium or heavy excavating machinery will find a very good investment to have on hand. The first is a good chain block of from one to two tons capacity which can be used in numerous ways. Around a steam shovel it has many applications in the reeving of cable or the picking up of heavy parts when making repairs. It can also be used in connection with the rolling stock for guiding cars into place, when dump cars are off the track, in straightening out a kink in the track between the trucks of a shovel and in many other cases.

The other piece of equipment consists of at least one powerful jack, the size depending somewhat on the maximum weight of the machine on which it may have to be used. The experience of many erecting engineers in putting up different classes of machinery under every kind of condition, has shown that a good easy running ratchet screw jack is better for this class of work than the hydraulic jack, as there is less to get out of order and it is much more likely to operate properly when suddenly needed. Where railroad type shovels are used, one jack of 25 or 50 tons capacity, depending on the size of shovel, will often help out in many ways. In the case of big draglines or coal stripping shovels, two jacks of this size or perhaps one of 75 tons capacity will often save their price during one or two calls for their use. Two jacks are particularly serviceable where the machine has to be erected a number of times.

Examples of the usefulness of both the jack and the chain block are innumerable. In taking a shaft out of a gear, for instance, the jack may be used for pushing and the block for pulling. On coal stripping shovels it sometimes happens that a rail will break under one of the trucks; a 75-ton jack will save much time and money, as it is sufficiently powerful to lift up one corner of the truck and permit the replacing of the rail.

For general contract use, a jack without a self lowering feature is usually fast enough and is recommended because of its lower cost.

Simple Method of Removing Machinery from Boom of a Big Revolving Shovel

The following quick and simple method of removing the saddle block, gears, or other parts from the boom of a big revolving shovel for the purpose of making repairs, has been suggested by Mr. C. C. Miller, who has had long experience in operating this type of machine.

First throw a heavy piece of chain, preferably a $\frac{7}{8}$"switch chain, over the boom above the hoisting engine. Then raise the dipper until it is about 10 or 12 feet above the bank. The two ends of the chain which has been thrown over the boom, are then hooked onto both arms of the dipper handle. Next take the top rollers out of the saddle block. This disconnects the saddle block. Then lower the bucket to the bank. As the saddle block has been disconnected the chains act as the bearing point and the ends of the arms are thus raised out of the saddle block.

A snatch block should then be made fast to the safety cable immediately over the shipper shaft. A $\frac{3}{4}$" or $\frac{5}{8}$" cable should then be run through this snatch block to the hoisting drum. In order to allow for operating the snatch block, a sufficient length of hoisting rope should be run off the hoisting drum. The best way to do this is to run it off with the aid of a team or mule.

When the snatch block is rigged the saddle block may be hoisted up and dropped out of the way. Then the thrusting gears and pinions. The repairing should, of course, be done on the ground. This method takes but a day and a half as a general rule, and requires a gang of but four men and a boss.

A Simple Method of Replacing a Broken U-Bolt

First shove the slide plate out of the way, along the dipper handle. If the yoke or saddle block has fallen to the ground, hoist it up by rope and set it on the gears. Drop the new U-bolt over the shaft. Then take a 2 x 6-inch timber about 10 feet long and put it over the engines and under the shaft. With a chain hook, pull the U-bolt around the shaft until the ends stick up, meanwhile put a man on the upper end of the timber and hold the U-bolt in place. Then pick up the yoke and slide plate and drop them over the U-bolt, this will require two or three men, the pit crew and cranesman may be called up. If the threads on the U-bolt have not been injured this operation should take but 20 to 30 minutes.

Raking Back Loose Material with Steam Shovel Dipper

It is not uncommon to see a shovel runner rake loose material back with the shovel dipper that has been pushed beyond the extreme digging reach of the shovel, or piled at the edge of the loading track, and then try to pick it up. It will be found that if a hole is dug beforehand, about the size of the pile of loose material, much time may be saved by scraping this loose material into it instead of trying to pick it up.

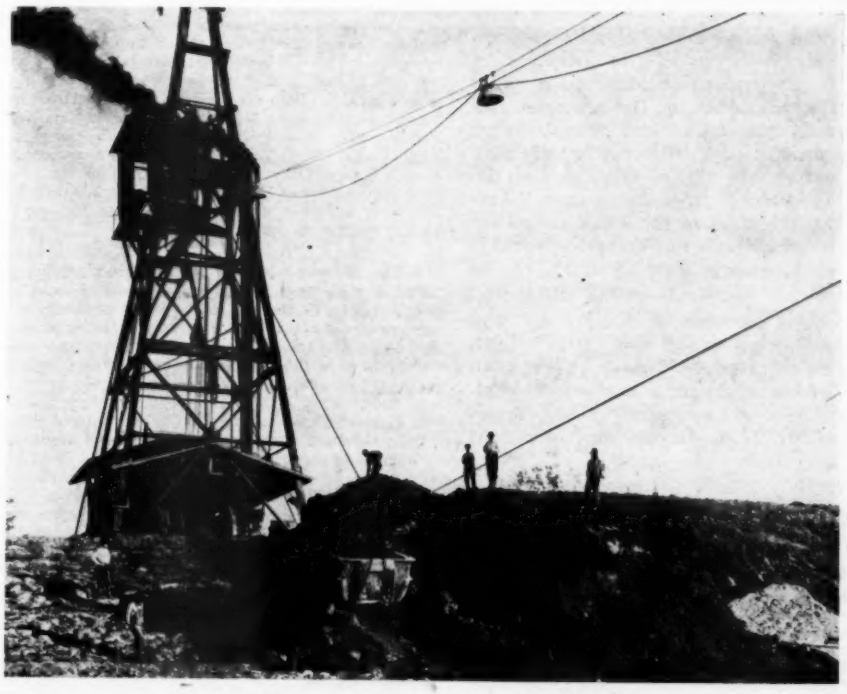
This photograph was taken from the operating platform of Winston Brothers' class-20 Bucyrus dragline just before the bucket was hoisted with a full load. It gives an excellent idea of how the canal is being dug. This is on the North Platte Project near Lingle, Wyoming. F. A. Mengel is operator of the machine.

Baldry, Yerbaugh and [illegible] Section 2 Welland Canal. Th[illegible] of hard clay in one month, [illegible] said to be the best output mad[illegible]

The views reproduced here, illustrate H. B. Blanks Levee Company's 6-yard Bucyrus levee building mac[illegible] design of this type of excavator for levee construction. This machine was designed to handle 1,000 cubic ya[illegible] dug and placed in the levee 1,150 cubic yards in 5 hours and 1853 cubic yards in 7½ hours actual operati[illegible]

's 85-C Bucyrus shovel on has handled 81,000 cubic yards 10-hour shift per day. This is . Wm. Geeson was operator.

A tough job for a dump wagon. A 40-R Bucyrus on traction wheels, loading a Troy wagon. Dean Iron Co., Hibbing, Minn.



ing a Mississippi River levee at Leota Landing, Mississippi. A great advance has been made of late in the hour shift, at the rate of 30 buckets per hour. During the first few days of operation, however, it actually The excavator has a span of 500 feet. The material is dumped on to the levee in front of the head tower.

Heavy Work on the Southern Railway

C. W. Lane & Co., Inc., of Atlanta, are at present engaged in double tracking 6 miles of the Southern Railway between Toccoa and Ayresville, Georgia. This is said to be the heaviest and most expensive piece of work per mile, on the Southern Railway. At the present time the contractors are making what is known as the Coldazell Fill near Toccoa, requiring approximately 2,000,000 cubic yards of material. Two M-O shovels and 12-yard Western cars are in use.

The Company is also building concrete piers at North Broad River for a double-track bridge about 1,400 feet long. There will be eight hollow concrete piers, two solid piers and two abutments. Some will be two hundred feet from foundation to top. It is estimated that between forty and fifty thousand cubic yards of concrete masonry is required.

The work is well under way and good progress is being made. Weather permitting and provided unforeseen conditions do not develop work will be completed in about eight months.

Stripping a Limestone Quarry

(*Continued from Page 255*)

For the first few days the dragline was used, as is shown in one of our views, for loading directly into dump cars which were handled by a locomotive. At the present time, however, it is in operation on the other side of the hill overcasting to a small revolving shovel which picks up the material and loads it into dump wagons. After the stripping operations have progressed a little further a dump will be established on the top of the hill and the dragline will load directly into dump cars. This will result in the elimination of the small shovel for this purpose. The dragline is not being forced; as it has no trouble whatsoever in keeping well ahead of the stripping required. It runs smoothly and easily.

Ed. Barnwell is foreman of the quarry and directly in charge of stripping and mining operations. Mr. Barnwell is an old time shovel man having been superintendent for Gallagher for a number of years. The design, equipment and operation of the quarries is in the charge of Mr. M. L. Jacobs, superintendent of quarries.

REVIEW OF BOOKS and CATALOGS

We shall be glad to review, in this column, such books and catalogs as are sent to us. Books reviewed in these columns will be supplied by The Excavating Engineer Publishing Company at the price named.

HAYWARD BUCKETS:—Catalogue 43, 6 x 9, 80 pages and cover, illustrated. One of the most beautifully printed, elaborately illustrated and intelligently planned catalogues that has come to out attention for a long time. It is replete with views of Hayward buckets of all types, engaged in all manner of digging. Also views showing details of construction. The catalogue is clearly written giving much valuable information. The Hayward Company, 50 Church Street, New York City.

LABOR SAVERS FOR CONTRACTORS AND RAILROADS:—Buckeye catalogue, Catalogue A, 6 x 9, 36 pages and cover, describing oxy-acetylene repair outfits, incinerators, etc. The Macleod Co. of Cincinnati, Ohio.

LABOR SAVERS FOR CITY SUPERINTENDENTS, SUPERINTENDENTS OF STREETS:—Paving contracts, water works, etc. Buckeye catalogue B, 6 x 9, 28 pages and cover, describing and illustrating completely surface heaters, gravel heaters, road oiling wagons, tar melting kettles, oxy-acetylene welding outfits, carbide lights, etc. Macleod Co., Cincinnati, Ohio.

TRADE NOTES

The Universal Portland Cement Co. announces the succession of R. L. Slocum to the position of Assistant Superintendent of Mill No. 5 at Universal, Pa., made vacant by the death of R. F. Knoth in January of this year.

Mr. Slocum was born at Homestead, Pa., graduated from the Pennsylvania State College in 1905, spent two years in construction for the Homestead Steel Works and began work in the spring of 1907 for the Universal Portland Cement Co., in charge of building construction and installation of machinery at Universal, Pa. Since the completion of the plant he has been responsible for extensions, repairs and in part for operation. His title is the same as that held since 1911, but he is now in charge of plant operation and management under E. D. Barry, Superintendent.

The spring convention of the Portland Cement Association will be held at the Palace Hotel, San Francisco, April 16-18, inclusive. This will be the first time in the history of the Association that any of its meetings have been held west of Chicago. A special train has been arranged for the going trip from Chicago to San Francisco via the Northwestern, Union Pacific and Southern Pacific route. This train will leave Chicago at 8 p. m., Central Time, Friday, April 13, and arrive at San Francisco at 9:00 a. m., Monday, April 16. At the conclusion of the committee and business sessions of the Association it is planned that members attending will go in a body to Del Monte, Cal., and spend April 19 and 20 there in an outing.

The American Society of Mechanical Engineers have announced that their spring meeting will be held in Cincinnati between May 21 and 24. The feature of this meeting will be a joint session on the 22nd with the National Machine and Tool Builders Association. Among other important sessions will be one devoted to the discussion of problems relating to the manufacture of munitions.

Engineers and contractors will be interested to learn that during the past month two of the largest technical publishing companies of the world have consolidated. The McGraw Publishing Co., Inc., and the Hill Publishing Co. henceforth will be known as the McGraw-Hill Publishing Co., Inc.

The new company acquires all the properties and interests of the two constituents, including the following technical journals: Electrical World, Electrical Railway Journal, Electrical Merchandising, Engineering Record, Metallurgical and Chemical Engineering, The Contractor, American Machinist, Power, Engineering News, Engineering and Mining Journal, and Coal Age.

Two of these papers, Engineering News and Engineering Record, will be consolidated under the name Engineering News, with Mr. Charles Whiting Baker, now editor of Engineering News, as editor-in-chief.

Mr. James H. McGraw will be president of the new company, Mr. Arthur J. Baldwin (now president of the Hill Publishing Company), vice-president and trasurer, and Mr. E. J. Mehren, vice-president and general manager.

SHOTS FROM THE · FIRING LINE ·

Arizona

Within two or three months it is expected the big leaching plant of the New Cornelia Copper company will be put in operation. The power plant, coarse crushing and fine crushing plants are practically completed, and the leaching tanks, solution storage tanks and sulphuric acid tanks are nearing completion rapidly. Three steam shovels are on the ground; although only two will be used, the additional one will be held in reserve. Stripping of the waste overburden has begun, but this work is of slight importance inasmuch as there is very little overburden and it occurs only at irregular intervals. The leaching grade ore practically comes to the surface.

The big plant of the New Cornelia company is designed to produce 36,000,000 pounds of copper monthly at a cost of between 8½ and 9 cents per pound. With the maintenance of the present price for copper, it is estimated that if the company receives the benefit of the full operations of the plant during the last six months of the year, it will earn $3,600,000 net, or better than $2.50 per share on the outstanding capitalization after the deduction of bond charges.

A contract has been let by James Douglas for the construction of three miles of railroad from Clarkdale to the new smelter site of United Verde Extension Copper Company at Jerome. Douglas says that it is expected to extend this railroad to Mesa and Phoenix at a later date. Present cost of construction materials are so high that only urgent work is justified. Grading for the railroad and smelter has started.

California

San Francisco and Vicinity

BY F. W. SCHUMACHER

It might be interesting to learn that G. H. Hutchinson embarked on the "Persia Maru" for Petrograd, Russia, where he will represent Bucyrus Company's interests.

Hutch was all decked up in store clothes and had an immense rock in his necktie(it was a yellow necktie too). Some may have wondered why the Grand Old Man was so anxious about getting his new set of teeth but will readily understand when they are informed he is taking his bride with him. He has also accumulated 1600 pounds of personal excess baggage.

Hutch wishes to be remembered to all his friends and left his address:—Select Hotel, Petrograd, Russia, for those who dare to congratulate him.

R. B. Markle secured about four miles of new road work from the Marin Municipal Water Co., consisting of 60,000 yards of excavation. "Highball" Hauser and "Gas Plant" Grover are putting his Bucyrus 14-B in shape to start on the work.

Bob Reynolds advises that Bert Van Horn got as far as the California line but thought better of it and turned around and went right back again.

G. T. Fleming is located at Thalheim, Cal., for the Keystone Construction Co.

John Durkee is operating Erickson & Peterson's 45-ton Bucyrus at Richmond, Cal.

J. R. Murry, Joe Tortado and R. Sypkins are running one shift and Bill Sparks, E. A. Liebhauser and Jerry Derrington the other at Healy Tibbits Construction Co.'s quarry, Winehaven, Cal.

C. R. Butterfield, contractor, Los Angeles, Cal., has a Bucyrus 14-B shovel excavating near San Pedro, Cal., on work for the government.

B. E. Scott, L. C. Pendell, J. C. Callahan, have just returned from the Spring Valley Water Co.'s Dam work where they have been operating a model-41.

Jim Daly connected up with the M. D. Goodbody job at Andrade, Cal.

A letter from Leo Dehoney states that Chris Zingg is master mechanic of shovels for the New Cornelia Copper Co., at Ajo, Ariz.

H. W. Wagner's latest hang out is at Bena, Cal.

P. A. Peterson, superintendent for Palmer & McBryde, has been ill for several months but is now able to return to work at the Calaveras Dam.

James J. McGinnis is overhauling an Old John Vulcan at South San Francisco. He may have to look up into the blue sky for parts at times but Mac is there when it comes to making the Old Mill work. Issy, he is!

Scott & Turner are shipping A. B. Markle's Vulcan shovel to their Placerville County road job where they have about 45,000 yards to excavate.

H. M. Kortright came in from the southern part of the state and will sojourn here until the season's work opens.

"Smiling Joe" Lacey is talking about operating a wheat ranch in Utah. Joe says they give you 320 acres for dry farming and for fun, and the water spouts out of the ground. What more could a man want for nothing. It is to laugh.

Jim Smith, Bill Geraghty and Fireman Nager have reported in from McNear Point where they have been running a 70-C for the Daniel Contracting Co.

"Race Horse" Denny blew in from Los Angeles. It is rumored he occupied a stateroom enroute.

Come Back Jones, who has been laid up for several months with typhoid fever, is now up and about again.

O. S. Olsen has a gang of men at work on the trestle at Blairsden, Cal. and is paving the way so that Palmer & McBryde can resume operations on their Western Pacific job.

Harry Hobbs, Frank Smith and Callahan are preparing a model-20 for work at St. Francis Wood Tract for A. E. Buckman.

Ted Thornston and Jack O'Donnell are operating a model-28 for the San Francisco Bridge Co., at Hunter's Point.

Harry Sweet has again hied himself off to Ruth, Nev., and hopes to remain there forevermore. It can't be did.

"Smiling Joe" Lacey has been running a Style "A" filling washouts on the Oakland & Antioch Ry. Joe states that he now has the road in first class condition and traffic has been resumed on the Danville Branch. Iama Ruff was craning, Guy Wright firing, and Wm. Stuby watchman. Jack Welch, superintendent of construction and tunnels had charge of the work.

William M. Rosewater, commercial engineer of Bucyrus Co., is here on business and getting it.

Ritchie & Co. have put a steam shovel grading property at Forrest Hill Park Tract. E. D. Brown, engineer, John McCallum fireman.

Harry Trainer is watchman on a shovel at the Hunter's Point Dry Dock.

Guy Wright left for the Spring Valley Dam.

Al Adams and George Geros are on their way to Storrie & Co's work near Las Vegas, N. M.

William McDonald is at the Providence Hospital, Oakland, Cal., where he is being treated for a badly lacerated foot. While firing a shovel for Bechtel on the San Pablo Dam job, his foot became caught in some gears and was crushed badly. He is doing very nicely and we hope he will be out soon.

Dave Swearingen is superintendent of the Granite Rock Co.'s plant at Aromas, Cal. Bill Tierney, Fred Swearingen and Fireman Kennedy are running a model-50.

Steam shovel men at Los Angeles have started a local in that city. A. Tobias is secretary-treasurer and their address is 1747 South Reed St.

The writer had the pleasure of meeting Style "A" Lacy who claims he is the oldest steam shovel runner on the coast. He states he has run steam shovels since '87 and believe me he still has a hearty hand grip.

W. A. Kettlewell & Sons, Kingsburg, Cal., were awarded 10 miles of the Keys and Hughson-Turlock road; Lynn S. Atkinson, Jr., Los Angeles, 8 miles of Beckwith and Carmichael road; White & Gaskill, Los Angeles, 6¼ miles of the Hughson road from Ceres. This is all new highway work in Stanislaus County.

There are quite a few shovel men in this city waiting for spring work to start.

The Utah Construction Company, Ogden, Utah, has been awarded a contract for about 20 miles of grading running into the Imperial valley of California by the San Diego & Arizona Ry. The country through which the line will run is very rough and mountainous, and the grading will be extremely heavy. The bridging and track laying contract will be let to another company. Work is expected to begin immediately.

It has been officially announced by the Board of Supervisors of Tulare County, Cal., that a vote of the taxpayers will be taken in the near future, the outcome of which will disclose their attitude on a proposal to build a system of 400 miles of concrete highways in the county, the cost of which will be raised by direct tax.

Figures furnished by the Portland Cement Association show that contracts awarded for concrete pavements up to December 1, 1916, reached a total of 24,929,148 square yards. Of this total, 16,533,129 square yards are roads, 7,501,739 square yards are streets and 894,280 square yards are alleys. There remain to be collected and tabulated the contracts for December which will make the 1916 total go considerably beyond 25,000,000 square yards.

Canada

New Brunswick

The Nova Scotia Construction Co., 150 Upper Water St., Halifax, N. S., has been awarded contract for construction of line from Centerville to Andover, for the St. John & Quebec Ry. Co.

Montreal and Vicinity

BY B. ST. JOHN

Norcross Bros., of this city, will use a Bucyrus 18-B shovel in the excavation for the new Canadian Northern Railway station here.

Angus Sinclair, of Toronto, Ontario, who has another contract in connection with the new Canadian Northern Railway station, is bringing in steam shovels and dump cars from his last job in Ontario.

The Cook Construction Company, Limited, Montreal, are getting their machinery ready for another season's work on the aqueduct. While the labor question is a rather serious one here, they feel that they will be able to get all the labor needed, on account of there being but few construction jobs under way this summer.

Now that the sun is getting a little warm, the contractors of the St. John Valley Railway are beginning to come out and take a look at the surroundings like our friend the ground-hog. They, too, expect to be going full-swing before the end of this month.

Campbell & Garrett, contractors for the Quebec-Saguenay Railway, have been working their 40-R Bucyrus shovel all winter in a rock cut and have been making splendid progress. They were fortunate in securing a good gang of laborers who stayed with them all winter.

Vancouver and Vicinity

BY A. G. BROWN

R. H. Sperling, formerly general manager of the British Columbia Electric Railway Company, has been granted a commission in the British navy.

W. G. Murrin, who, since April, 1913, has been acting as general superintendent of the British Columbia Electric Railway with headquarters at Vancouver, is now assistant to the general manager, George Kidd.

The tender of Ledingham & Cooper has been accepted by the Harbor Commissioners for the installation of a sewerage and water supply for Granville Island, Vancouver.

On the British Columbia division of the C. P. R., there will be expended this year the sum of $1,250,000.

A programme for extensive repairs to streets, estimated to cost $120,000, has been prepared by City Engineer F. L. Fellowes, Vancouver.

J. H. Vickers, Vancouver, B. C., has been appointed superintendent of works on the Vancouver Joint Sewerage and Drainage Board's portion of the Stanley Park sewer outfall.

R. W. MacIntyre, of Victoria, B. C., has been appointed supervising engineer of construction work now being done on the Pacific Great Eastern Railway.

The Ladysmith Smelting Corporation, Limited, intend to expend $1000,000 for enlargements to present smelter. Superintendent, W. J. Watson.

James Drum, who has been operating the Sally mine on Wallace mountain, West Fork of Kettle River, is now taking out some of the richest ore which has yet been discovered on the mountain.

Application has been made by John Cameron Macdonald, William Greggs and Lorne McDonald for the incorporation of the Crow's Nest and Tent Mountain Railway Co., Edmonton, which proposes to construct a six-mile spur.

T. C. MacNabb, A. M. Can. Soc. C. E., formerly division engineer, C. P. R., at Moose Jaw, Sask., has been promoted to the position of superintendent at Revelstoke, British Columbia.

One of the highest bridges on the continent will be necessitated by the building of the Pacific Great Eastern Railway across the Cottonwood River, immediately south of Prince George, B. C.

Edwin H. Verner has been appointed municipal engineer for Langley, B. C. He formerly held a similar position for Port Coquitlam and Coquitlam Municipality.

The Central Canada Railway Co., is asking the legislature for permission to build a road southwesterly from Edmonton to or near Calgary.

Major James A. DeLancey, of the engineering and surveying firm of Lighthall & DeLancey, Vancouver, B. C., has been awarded the Military Cross.

The construction of an interprovincial railway from Banff, Alta., to Windermere County, B. C., is under consideration by the Department of Public Works, Ottawa, and the British Columbia government. The project will come up for discussion in the British Columbia Legislature this spring.

Thomas J. McAlpine, of Summerland, B. C., has been appointed road superintendent for the South Okanagan riding by the provincial government of British Columbia.

Mr. H. R. Gerrard, of Alberni, has been appointed city engineer of Duncan, Vancouver Island.

H. W. Aldrich, late superintendent of the blast furnaces at the Washoe smelter at Anaconda, Mont., arrived Wednesday to take over the position of superintendent for the Ladysmith Smelting Corporation, Limited., the new organization which is to reopen the Tyee Smelter.

Notes from the Winnipeg Aqueduct

BY WM. SMAILL

The class-20 Bucyrus dragline is being moved up over the snow from the Falcon River Crossing, to do some stripping where there is some rock excavation in the Aqueduct trench, about a mile and a half west of the river. The interesting thing about this move is the ease with which the dragline can be moved over the deep snow, using the pads in the ordinary manner. They are really making better time moving over the snow than they did over the ground last fall.

The snow is very deep here yet, but the sun is beginning to make itself felt and unless we get another spell of cold weather we will likely be able to resume excavation work some time early in April.

Colorado

Inter-Mountain Notes

BY H. N. STEINBARGER, DENVER

Lincoln County, New Mexico, will have a "Lincoln Highway" of its own if the proposed bond issue of $55,000 is carried. The United States Government promises a like amount making a total of $110,000.

The road will run to the county seat and will be confined to Lincoln County.

The road bond election will be only one of a large number of similar elections throughout the state, all in the interest of better

roads. County and state associations have organized and are doing active work in the interest of better roads throughout the entire state of New Mexico. When the "King's Highway" is completed it will connect with the good roads of Colorado and Texas and will bisect the State from north to south. It follows in places many of the old Spanish roads laid out many years ago by the Spaniards before the territory became a part of the United States. When this highway is completed it will make a route from north to south clear across the United States and one of the greatest scenic highways imaginable.

Allen and Lafferty of Denver, recently took a good-sized ditch contract from the Huerfano Ditch Co., of Pueblo. The work is south of Pueblo near the town of Williams, Colorado, and will keep them busy the better part of this season. There is considerable yardage of earth to handle and also some concrete work which they have placed in charge of Dan McQuaid.

Bob Gleason of the firm of Hamilton and Gleason, was in town a short time ago on his way down to southern Colorado to the site of a new piece of Rio Grande work the contract for which they recently signed up. Bob has been spending some time on the big ranch which he owns at Townsend, Montana. G. W. Hamilton of this firm is also on the work and from all reports we hear the dirt must be flying in all directions. They have about a nine-mile stretch of new road which is building into the coal fields. It is a hurry up job and the road will skirt the hills in that section, making the work somewhat light on some sections. However, as a whole it makes a first class job which must be rushed through in quick time.

One of their 70-C Bucyrus shovels is being employed in addition to a considerable sized team outfit. They are expecting, and no doubt will, finish on schedule time.

Bob Dooling is still hanging around Denver, ostensibly to finish up various details of their accounts. He has been around for about three or four months, so we are wondering whether or not there is not some other incentive for remaining in Denver. Of course, it is a good town and lots doing in spite of the dryness.

A recent visit to Bob's room at the Savoy Hotel enlightened us somewhat, or rater we should say from the number of telephone calls from persons with mild, sweet voices, gave us the idea that the Dooling Brothers accounting system must be quite extensive. There must have been at least six calls within an hour and a different voice each time. If you want any more information, ask Charlie Campbell as he is usually sticking around pretty close.

Utah Construction Company who were awarded big contract about a month ago by the Union Pacific for second track work in Sherman Hill District, Wyoming, are getting the work started in nice shape. It is being thoroughly covered with sub-contractors and as fast as labor can be secured the work on the various sections is started. Considerable difficulty has been experienced with labor so this company is endeavoring to bring in negro labor from the south. Several crews of men have passed through Denver recently, about forty to sixty men in each shipment.

Foreign

Bolivia.—The president of Bolivia has been authorized by the Congress to undertake the construction of the Uyuni-Tutiza railway, between Atocha and Topiza and to contract for the purpose of carrying on this work. This railroad will build up vast agricultural regions in eastern Bolivia. This section of railroad is all that remains to be constructed of the line which eventually will connect La Paz with Buenos Aires.

Cuba.—Our friend, R. J. Leonhardt, who is with Champion & Co., at Quintana, Province de Matanzas, Cuba, in charge of their draglines, has written us a very interesting letter in regard to conditions in his part of Cuba at the present time. He states that the revolt caused by the Liberal party has affected them. Not very far away from where he is there has been a considerable amount of trouble. The government has confiscated 800 boxes of dynamite and has taken them off under heavy guard under cover of the darkness of night. The contractor has also been refused coal, as this was needed for the moviementoes de vapores, (movement of boats).

At the time his letter was written they were well tied up, but fortunately their pay was going on just the same. He says, "We are not uneasy as to our own welfare while we are true American citizens. Uncle Sam has warned the Liberals not to molest us or our property and they sit up and take notice."

Honduras.—Owing to the continued high price of coal the Honduras National Railroad has abandoned coal as a fuel and is using wood, cut along the line of the railroad.

Russia.—As an indication of the activity which may be expected from now on in Russian railroad construction, it may be of interest to American contractors to know that between 1917 and 1922, 20,779 miles of railroad are projected, the cost of which is estimated at $309,000,000. Between 1922 and 1927 the Special Commission of Ways of Communication has recommended the construction of 30,000 miles of new line.

Georgia

Application has been made by the Americus & Atlantic Ry. in Georgia for incorporation. Work is now under way building from Byromville, Ga., on the Atlantic, Birmingham & Atlantic southwest to Americus, 26 miles, with a spur to Bauxite mine 5 miles; track has been laid on 14 miles, and the construction of a trestle and bridge have been finished over Flint River. J. S. Morton, Byromville, Ga., is the contractor, and will probably be president of the railroad. This work is on a section of the line projected under the name of the Americus, Hawkinsville & Eastern, which was organized to build from Hawkinsville, southwest to Americus, about 55 miles.

A contract is reported let by the Atlanta & West Point Ry. to the Brooks-Callaway Company, Atlanta, Ga., to build second track from College Park, Ga., to Palmetto, about 16 miles.

Illinois

Chicago and Vicinity

BY E. C. HINGSTON

The last issue of "The Excavating Engineer" announced the intended departure of our friend Hutch (G. H. Hutchinson) for Petrograd, Russia. Previous to his departure Hutch spent some little time around Chicago and Milwaukee where he met a number of old friends and made a few new ones. He was very jovial and seemed to be very happy at the time, but knowing Hutch as some of us do, we did not suspect. Shortly after his departure from Chicago for the Pacific Coast one of our number sprung upon us that Hutch was going to take upon himself a bride, but inasmuch as he did not drop anything that would suggest wedding bells we rather poohed at the idea. We wrote Hutch, however, just before he left and also wired him pressing him for definite information, and his reply was "The noise that LeMair is making in and around Chicago is correct and I am not leaving here alone by any means." We certainly wish our friend Hutch and his bride a pleasant journey and more settled conditions upon his arrival in Petrograd than we are advised exist there today.

Mr. Earl C. Clemons, president of the Mid-Nation Iron Products Co., is a pretty busy man these days completing the financing of his company which is being formed to develop large iron ore deposits in Southeast Missouri, 25,440 acres of which Mr. Clemons has been able to corral in the last two years, and from the amount of iron that shows up on the surface we believe Mr. Clemons has a wonderfully good proposition for a large scale operation, and we have no doubt but that with Mr. Clemons' ability he will be able to finance his company so that he will be producing iron ore within the next five or six months.

Kansas

F. M. Thompson, of Larned, has been awarded grading contract for extension of the Anthony & Northern Ry. from Larned to Hays, 57.3 miles.

Cameron, Joyce & Co., Keokuk, Ia., have been awarded contract for cut-off on the Santa Fe R. R. near Washington.

Pittsburg and Vicinity

BY W. S. RUSSELL

The weather bureau decided to open its storage tanks and let down some rain on this long suffering district which occurred about the middle of last month, being a great benefit to the farmers' crops, but there was not enough of it to fill the ponds and creeks with a permanent supply. This we hope, will come soon for there are several of the coal stripping plants shut down for the want of water to operate the steam shovels and other machinery.

The most important matter under discussion now is the Bone Dry law in Kansas which went into effect last month. This may have had an effect on the weather and been an effort to keep up the wet condition prevailing among so many of the inhabitants.

The mine workers of Southeastern Kansas, most of whom are foreigners, are going on a strike with the slogan, "No Beer no Coal." They do not like the recently passed "Bone Dry" prohibition law. At last reports only at one mine had a strike taken place, but a meeting was held on March 4th to discuss the question as to what the mine workers regard as a restriction of their liberties.

"A bone dry joke" was played by a burly traveling man on a fellow passenger who had provided a means of quenching his thirst on a train out of Kansas City going into Kansas, the other day. After the train crossed the state line the traveling man went into the smoking car and said in a loud voice, "Gentlemen, I am the sheriff and I want you all to put your grips out in the aisle so that I can search them without undue trouble." The thirsty Kansan had visions of a jail sentence for having in his possession some liquor. Whereupon he threw his grip out of the window. He was a sore individual when he found that the "Sheriff" was only a traveling man bent on having some fun at the expense of those trying to evade the "Bone Dry Law."

We note reports from trade journals vary somewhat as to the coal market at Chicago, Detroit, Cincinnati and St. Louis. The domestic trade has fallen off but the industrial demand holds good and prices are about the same. There is an acute shortage of steam coal in New England. Snow storms and car shortage retard transportation. The market for steam coal in Alabama holds good and heavy. Contracts have been made by railroads at $2.00 per ton as against $1.25 a year ago. Spot steam prices are from $2.50 to $3.00 per ton for mine run at the mines.

The market in the Kansas district is decidedly off with a light demand. We quote prices on bituminous coal as follows:

Lump, per ton	$3.00
Nut, per ton	3.00
Mine run, per ton	2.50
Mill run, per ton	2.00
Slack, per ton	1.75

F. O. B. railroad cars at the mines.

General business is rather quiet in Pittsburg just now. It being between seasons and March is usually a bad month for outdoor work. We understand there is considerable building planned for this year as the population is growing and will soon reach the 20,000 mark. The traveling men are now getting in their work and the hotels are well patronized.

We note a change of management of the Stilwell Hotel on January 1st. Mr. O. K. Dean, the former proprietor, having sold out to Messrs. Remler and Williams of Oklahoma, who have made several desirable changes in its operation, which are duly appreciated by its patrons.

We understand a company is being formed to construct an electric line from a point near Pittsburg north along the state line to Oskaloosa about 23 miles to furnish the coal mines and others a current for operating tipples, pumps and other machinery at a reasonable rate, which will be of considerable advantage to them.

The Cox Creek Coal Company of Arcadia, have started work stripping a field of 120 acres about a mile south of town on the Frisco Railroad with a model-252 Marion steam shovel. The overburden is from 16 to 32 feet in depth with a coal vein averaging 30 inches thick. Mr. Victor Lecoq is general manager at Arcadia.

The Rotary Club of Pittsburg, a business men's organization to promote social and friendly intercourse, held its monthly banquet at the Stilwell Hotel recently. About 45 members were present and a good time was had.

James Evans, representing the American Steel and Wire Company, spent a few days at Pittsburg last month and secured several orders for their popular brand of wire rope for steam shovel and shaft mine use.

J. F. Klaner, having purchased a controlling interest in the Mulberry Coal Company, is giving his entire time to its management. This coal stripping plant is located on the Kansas City Southern Railroad at Ardath, about 4 miles north of Mulberry.

There are good opportunities for parties having means to engage in coal stripping in the Kansas field. Strip coal lands can be bought or leased at reasonable prices and there is good money in the business. Further information will be furnished by addressing, W. S. Russell, Stilwell Hotel, Pittsburg, Kansas.

The Bucyrus Company have a stock of repairs for their coal stripping steam shovels at the W. L. Sullivan Machinery Company store room, which is a great convenience to operators of Bucyrus steam shovels.

The W. L. Sullivan Machinery Company are located on 7th Street near Broadway where they carry a large stock of miners', mill, railroad and contractors' supplies. They are dealers in machinery, engines, boilers, pumps, motors, etc., for either steam, gasoline or electric. Also have repairs for Bucyrus steam shovels. Mr. Sullivan will give his personal attention to the wants of his customers.

The Hughes Stone Company, 208 East Third St, Tulsa, Oklahoma, have for sale a model-36 revolving steam shovel, one yard dipper, all in first class condition and in working order, having been used only 8 months in their quarry. Price and terms reasonable.

Louisiana

From the Sunny South

BY THE BYRONS

The Grasser Contracting Co. report good progress on their levee job at Sarpy, La. They are not certain if they will be able to work during high water which is due in a few days. Mr. Davis is in charge of this work for the Grasser Co.

About 2,000,000 yds. of dredge work was let in Alexandria, La., the other day. Douglas, Burt & Buchanan of Shreveport, La., were successful bidders on this work at .0785. They have sublet the first section to Picard, Buckmaster & Weil of New Orleans. All of this work is to be done with dredges. All of it except 250,000 yards of cutoff is cleaning out an old canal.

The high water this year does not look so dangerous at this writing but all depends upon the rain of the north. Every one is hoping for a very moderate high water this year.

Mr. W. M. Buchanan of Shreveport gave us a call the other day and reports everything moving along nicely with him at Shreveport where he is using two class-24 Bucyrus draglines. Your correspondent cannot just understand why "Buck" could not be persuaded to stay longer especially when you consider the two cities. An explanation would be appreciated by the writer.

Mr. John McCoy of Iowa passed through here and gave us a call. He has been working for P. B. Engh of Fresno, Cal., but high water shut this work down about a week ago.

D. B. Hearin & Son have placed one of their machines on their Towles levee job and Mr. Hearin advises that he will be able to work longer on this job than any he has before high water will stop him.

Wm. Welsh, erecting engineer for the Bucyrus Co., is erecting a class-24 machine for the Grasser Contracting Co. on their levee work near Innes, La.

The government's Bucyrus dragline, the "Beauregard," is being overhauled and will be ready to go to work as soon as the water is high enough for her to work off of a barge.

Mr. C. S. Miller, Memphis representative of the Western Wheeled Scraper Co., gave us a call the other day. He states he was seeking business as usual. He had several business engagements to fulfill but your correspondent found that he had checked out from the hotel without keeping the engagements. He probably got hold of a live prospect. Prospect not specified.

High water is stopping most of the contractors along the river, but they are in better spirits this high water than they have been in the past for there is a reason. "The Flood Control Bill" passed.

Picard, Buckmaster & Weil of New Orleans have finished their dredging job near Darrow, La., and they are moving their Marion dredge onto their work near Alexandria., La.

Your correspondent had the pleasure of calling on Frank Constant while in Alexandria attending a letting the other day. Mr. Constant let the many contractors there on March 6th and 7th use Alexandria on the above dates but they returned the city to him before leaving. Mr. Constant has a lot of levee and railroad work he is doing with teams and reports good progress.

Anyone in the southern States wanting first-class dragline and steam shovel operators may address the "Byrons", 1105 Hennen Bldg., New Orleans, La.

D. B. Gore Company, Inc., have about finished installing their coal machinery at Taits Gap, Ala., consisting of one Bucyrus 225-B revolving shovel and a Bucyrus 18-B shovel for loading coal. George Moore, superintendent, told the writer recently that he took the 18-B shovel up into the mine under its own steam and over a 15% grade. This shovel is mounted on caterpillar traction.

Elkins and Company and Robert Russell were the successful bidders on the A. G. S. Ry. double track work. This is quite heavy work and will require shovel outfits.

P. H. Lallande is in the market for a good second hand 2½-yard shovel and four or six yard cars and two or three dinkeys. He can be addressed at Birmingham, Alabama.

T. W. Crowe, president of the Sunlight Coal Company at Jasper, Ala., reports the coal business brisk, and is shipping about 350 tons of coal per day. This company is operating a 225-B Bucyrus revolving shovel and a 35-B Bucyrus revolving shovel, loading coal.

High water in the Mississippi above Vicksburg has stopped most of the levee work, and contractors are spending their time gambling on the height the water will go.

The recent high water in the Tennessee River at Chattanooga and vicinity has made many homeless and destroyed a great amount of property. The citizens are now planning the building of levees for protection to the surrounding lands in the lower sections.

At a very large meeting recently held in Vicksburg, Miss., a permanent organization of property owners in five counties tributary to the Mississippi and Yazoo Rivers was created for the purpose of deciding on the building of several miles of protection levees to cost over one million dollars.

Newell Contracting Company at Birmingham, Alabama, have finished the shovel work on their road work near Rodgerville, Tennessee. They have been using a Bucyrus 14-B revolving shovel, mounted on caterpillar traction, and A. T. reports none better.

Minnesota

Twin City News

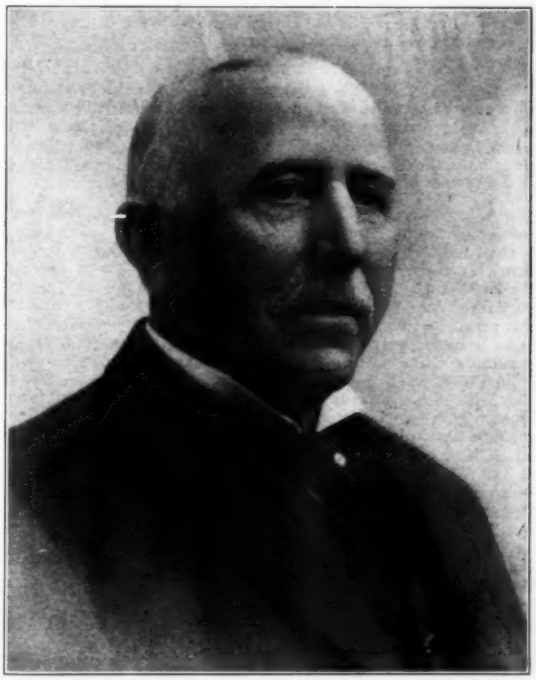
CLAPP, NORSTROM & RILEY

1308 Pioneer Bldg., St. Paul.

At the last meeting of the commissioners of the city of St. Paul they deliberately turned down all the bids for paving which were lower than the City Engineer's estimate, which did not include overhead expenses and which at a conservative estimate would not be less than 20% and would aggregate some $8,000. Commissioner McColl was honest enough to vote his convictions on the question of inviting contractors to bid on the work for the sole purpose of being refused the contracts upon which they spend their time and money in making their bids. Some time ago these same commissioners sent out invitations to manufacturers of equipment to tender bids on a piece of equipment that cost several thousand dollars. They received the tenders and awarded the sale to a concern that has lately started into business and has had little or no experience in building the machine in question, at the same figure, that a concern that has had 30 years' experience in building these same machines, bid. The machine they purchased was selling in the open market for $700 less than the one they turned down, at the same price. What we can't comprehend, is why the commissioners did not stick to their policy and turn down all bids and build the machine by force account, as it appears from their methods that there is no lack of wheels in the upper story of this wise (?) and concreted commission. We believe that the citizens of St. Paul have had about all the commission form of government that they will stand for and will follow Denver who tried it for a while and were glad to get back to the Mayor form of government. The time is not far distant when the people will wake up to the fact that a good plan for electing their representatives, both state and municipal, would be to compel each candidate to pass a rigid civil service examination before he is qualified to be even a candidate. This plan may not prove perfect, but no doubt will eliminate to some extent the professional office seeker that has no qualifications for the office he seeks further than a concrete dome and the control of money enough to buy votes. Ask Denver, she knows.

Russell Condon came over from his Omaha bailiwick to look around St. Paul and find out if it was as dull in the construction line here as it is in Nebraska and he went home satisfied with his own state but admitted that there was more of some things in Minnesota, especially snow.

L. A. Bumgardner Co., are not doing a great amount of construction work but they have a lot of rails and equipment that they are keeping the kinks out of with anticipations of better prospects in the near future. They have some rails and dinkies they might sell if properly approached.



Peter Siems

In the year 1865, before the blood stains were washed from the battle fields of the Civil War, there landed at Castle Garden a German, with probably thousands of others. He was 23 years old and well endowed with brawn and brain. From his manly upright bearing and the look of alert intelligence in his countenance, a casual observer would have picked him out of the throng as a remarkably promising youth. He knew where he was going

as he had read about it and marked the lines on the map of the world and knew where the West began.

To write a history of the achievements of Peter Siems, would be to write a history of the great James J. Hill, for what the one dreamed and planned the other executed and formed into a reality and the development of the great Northwest was due to to their combined talent and energy.

Peter Siems began building railroads when the last word in modern equipment was a wheeled scraper, and a 35-ton steam shovel was looked upon as an unwieldy mechanical monstrosity, and at which time the stable-boss was lord of the realm and king of the camp. Mr. Siems not only developed the use of modern equipment up to its present high efficiency, but also developed men. His unerring judgment of fit men is evidenced by a score of the most able engineers and construction men in the world, who owe their training and development to him.

Modern methods with modern equipment make past accomplishments appear insignificant, but when we consider the difficulties and hardships that the early day contractor had to contend with on the frontier, the balance is far in his favor.

From a business standpoint the passing of Peter Siems will not be unduly felt, for his house was in such complete order, that no single unit in his organization could retard the progress of the whole. He is survived by three sons, all actively engaged in constructive contracting. Chester P. Siems is senior partner of the Siems-Carey R. R. & Canal Construction Co., of New York and Peking, China. Allen G. and Claud H. Siems are senior partners of the Siems, Helmers & Schaffner Co., of St. Paul.

Socially, our pen is too cumbersome to begin to record the regret and sorrow at bidding him farewell.

George Condon, the galloping kid from Omaha came in to look over the profiles of the Northern Pacific work and make a bid. We at first thought he was a son of Russel Condon, but were disabused of this idea by Russel Condon who took pains to explain that he was only his brother.

A letter from R. M. Quigley from Kansas City says that he is smooching around the zinc and oil fields of Missouri and Oklahoma and has purchased some promising properties in the oil district. They are now in the state of development and he thinks that they promise a great future. Mique always was partial to oil, especially olive oil, and in the past we have enjoyed many samples prepared by his culinary efforts. In one paragraph of his letter he says: "Have not gone in very deep in my flyers as you know I like to smell around the bait and watch the other fellows get caught and then gamble with their experience." But Mique is as game as the next one if the game offers an even break. However he is still in the contracting game which is almost as hazardous as oil speculation.

A later letter from Mique advises that he has opened offices at 123 W. Madison St., Chicago under the firm name of The Quigley & Bonner Co., and that they have two dragline plants in Denver ready to move anywhere the work will warrant.

J. N. Gawthrop, Jr., of the Bucyrus Co., came up to tell us "how" and gave us an earfull of information in our best right ear and we are not going to let it escape via the left. J. N., Jr., is the itinerant expert of the Bucyrus Company and the things that he is not familiar with about a steam shovel are not necessary for the successful operation of one of these machines.

Mississippi

Contract for the construction of 1,053,000 cubic yards of ditch excavation was let at Senatobia, Mississippi, by the Arkabutla Creek Drainage District, on March 7th, to McGuire Bros. & Caldwell of Obion, Tennessee, for 7 cents per cubic yard. Two floating dredges will be installed on the work. Bonds have been sold and construction will proceed at once. Morgan Engineering Company, Memphis, Tennessee, are engineers for the district.

A convention was held in Vicksburg on March 15, consisting of 200 delegates, appointed by the property owners in Warren, Issaquena, Sharkey, Washington, Yazoo and Holmes counties, whose land has suffered from back water and overflow of the Mississippi River. A permanent organization was formed with Roscoe Barnett of Yazoo City as chairman. This organization will at once take proper steps to obtain the necessary legislation from the Mississippi legislature in order to have built the proposed Brunswick-Vicksburg Levee from the southern terminus of the present levee ending at Brunswick to the mouth of the Yazoo Canal, a distance by river of about 25 miles. It is estimated that it will cost about $1,200,000. The executive committee will work in conjunction with the levee boards of the upper and lower Mississippi levee districts, or without their co-operation, if they cannot secure it, to present these resolutions to the Mississippi River Commission, urging immediate steps to secure action.

McGuire Bros. & Caldwell, Obion, Tenn., have been awarded contract for 1,053,000 cu. yd. of ditch excavation at $0.07 per cu. yd. near Senatobia. Two floating dredges will be installed on the work.

Missouri

The Missouri Valley Construction Co., of St. Louis, has been awarded contract for several wing dams at city waterworks near Chain of Rocks.

St. Louis and Vicinity

BY A. B. KOENIG

The Missouri Valley Construction Company was awarded a revetment and shore protection contract by the Iron Mountain R. R. Co. near Ft. Gage, Ill.

Announcement was made that work on the north and south electric interurban through Central Illinois, known as the Springfield & Carbondale, will begin by April 1. The line between Pawnee and Hillsboro has been definitely located, passing through Butler and following the route of the Melick line. Between Pawnee and Butler the engineers found one stretch 30 miles long over which a railroad can be built without encountering a creek, a branch, or a hill of any size. They pronounced it the longest level and unbroken stretch of the kind through the center of the State. Headquarters have been established at Harvel, a two-story building being leased for the purpose. A great quantity of equipment is arriving at Harvel. D. P. Roberts is superintendent of the road, Harry R. Campbell is chief engineer, C. H. Forrester of Winnipeg is president, and Geo. Edison of Chicago vice-president. Ex-Mayor Crolius of Joliet and Roger C. Sullivan of Chicago, famous as a Democratic politician and cracker manufacturer, are said to be heavily interested. The new line is 142 miles long and bisects "Egypt." Because of the present high price of copper, gasoline motor cars will be operated on the line at first and the power plants and overhead installation will be deferred to a later date.

P. M. Johnson & Co., Sidell, Ill., have 10,000 to 15,000 yards of earth to move in Vermillion County, Ill., on highway paving.

J. C. Kaiser will finish his levee work at Caruthersville shortly. Is in the market for a job for his 25-team outfit.

Contracts have been let to the Fruin & Colnon Const. Co. for $115,000 worth of improvements on the Naffit tract, which consists of 11,000 feet of property on the Clayton and Skinker roads. Two grading gangs already are at work putting the property into shape to be marketed this fall.

Cameron, Joyce & Co. sublet 30,000 yards of State Aid work between Hillsboro and Nokomis, Ill., to T. A. Gasaway of East St. Louis.

Jim Joyce, of Cameron, Joyce & Co., is going around on a crutch. Broke his leg last fall and was laid up all winter.

S. R. H. Robinson Co. have finished their work on the Calumet Sag Channel near Lemont, Ill. Are now in the market for some more work. They have four draglines, steamshovel, dinkie, cars and a 15-team outfit idle. Room 1606 Chemical Building, St. Louis, Mo., will catch them. R. A. Dentzer is in charge of this office.

Kansas City and Vicinity

BY M. T. BABB

Contractors in this territory are anxiously waiting for the Burlington award to be made. It is stated the successful bidder will be announced on Monday the 12th. If conditions are satisfactory the steam shovel work on this contract will be covered

promptly, but teams are already scarce in this vicinity and it is plain to be seen that team outfits will have all they can do this summer.

Dick Easter will move 50,000 yds. on the Missouri Pacific near Lomax, Kans. This work is under A. L. Cook, of Ottawa, Kansas.

Ralph Dutcher was a caller last week. He has some nice team work on now and more in sight.

Bean & Mayo, Culver, Kans., are in the market for work for their team outfit. Probably they will line up with the Burlington work to be let. It is safe to predict their outfit will not be long idle.

Jerry Connelly has been spending the winter in Kansas City. The Connelly Bros. outfit is idle now, the U. P. work at Castle Rock, Utah, having been finished. Tom Connelly of that firm is on his Colorado ranch.

We enjoyed a visit this week from H. H. McDowell, of Colorado. Years ago we knew Mr. McDowell on work at Brazil, Indiana. He is now figuring on some new proposition and probably some interesting announcements can be made later concerning him.

It is always interesting to hear an "old time" talk of the days when the wheeler was the king of grading tools. Tim O'Hearn of this city is one of those fading few. Tim was in last week and related some chapters of a closed book that would make mighty interesting reading if they dared be printed. Those who read these lines and remember Mr. O'Hearn will be sincerely glad to know that he is well and prosperous. He has the esteem and confidence of the men who are the backbone of Kansas City, and his honorable life in this city has justly earned this position.

Mr. W. D. Foulke, Treasurer of the Western Wheeled Scraper Co. was in Kansas City recently. We certainly enjoyed the two days he spent here and only wish the visits could be made more often.

C. E. Jennings has taken a road contract near Pittsburg, Kansas.

R. T. Amis has moved his outfit to Purcell, Okla., to do the Santa Fe work at that point. Cameron & Joyce are the general contractors.

Cameron & Joyce, Midland Building, Kansas City, Mo., have contracts for road work that will occupy all summer. The work is in Illinois. Team contractors take notice.

Montana

The Northern Pacific Ry. has awarded a contract to Martin Woldson for 32 miles of change in line on a low grade freight line between Lyons and Bozeman, Montana. The yardage is estimated at about one million, principally borrow. This looks like a good dragline job.

New York

New York and Vicinity

Henry Steers Company, who have been enlarging the Pennsylvania yards at South Amboy, N. J., have recently purchased another Atlantic shovel, class-80, in addition to the class-45 Atlantic which they have been using there since last May. The first Atlantic is famous for its world's record of 82,250 cu. yds. in 24½ working days, made last August. The Company still have about 1,500,000 cu. yds. of sand and clay to move on this job. The total improvement involved an expenditure of $2,000,000.00 on the part of the Pennsylvania Railroad Company. Henry Steers Company expect to do the entire job with the two Atlantic shovels, 24 12-yd. Western dump cars, which have averaged 18 cu. yds. so far, and two American 38-ton locomotives.

W. B. Fitzpatrick, the efficient and genial superintendent on the job, says there is no shovel like the Atlantic for soft earth and clay excavation. He says he will make any other shovel eat his smoke on this class of material.

Big Charlie Ryan has been in charge of the record-breaking Atlantic, and Louis Broughton cranesman, during the entire performance. The story of this interesting exploit was printed in the October issue of the Excavating Engineer.

The Upper Hudson Stone Company has recently moved its Atlantic class-45 from the east to the west side of the Hudson River. The new work will be digging heavy rock for a crusher. On the old job the crusher would handle only 20-inch rock, but the new crusher at New Hamburg has a capacity for 4-foot rock. This will greatly increase the efficiency of the shovel. The new work is in conjunction with the Bucyrus 103-C shovel. Mr. Martin Lynch is superintendent of this job.

James Stewart & Co., New York City, have been awarded contract for removing rock and dredging in the Hudson River at $358,600.

Ohio

R. J. Black is operating a steam shovel for the Jones-Gray Company at Lucasville, Ohio, R. No. 3 on the C. & O. Northern Railroad.

Robert Grace Contracting Co. are making good progress on the 500,000-yd. contract on the Chesapeake and Ohio Northern near Givens, Ohio. They have in service on this point an 18-B Bucyrus shovel on caterpillars. The machine is working in wet material and reports indicate that the shovel has done splendid work with small up-keep cost under difficult conditions.

Pennsylvania Lines West has awarded a contract to P. T. Clifford & Son, Valparaiso, Ind., for additional yards and new engine facilities at Akron, Ohio. There will be about 100,000 cu. yds. of grading. The contract price is $286,000.

Oregon

News from the Northwest

BY L. T. RUSSELL, PORTLAND

Mr. Martin Woldson, of Spokane, Washington, is reported as the successful bidder on the Bozeman and Logan cut-off on the Northern Pacific in Montana.

Mr. Frank Rajotte, of Rajotte & Fobert, has a small railroad job in Idaho.

Twohy Bros. are busy with their work in California, which is an extension of the San Diego & Eastern.

Porter Bros. have landed several pieces of work lately, and have a number of steam shovels at work.

Standifer-Clarkson Company have dropped earth moving for ship building, at least temporarily, and are now building several wooden vessels for different interests.

A number of fairly large railroad jobs in this vicinity are expected to come to a contract in the near future.

Mr. C. P. McDowell has returned to Ruth, Nevada, where he is running a 95-C Bucyrus shovel.

Eugene Pruner, shovel operator, was a caller at the Portland office recently.

An issue of road bonds amounting to six million dollars are to be voted on at the coming June election. If the bill becomes a law, Oregon may get some badly needed highways built, as under the Federal Act recently passed the Federal Government will put up dollar for dollar with any state appropriating or otherwise raising money for road purposes.

It is confidently expected that some irrigation work will be financed and started in Oregon and Washington during the present year. Here's wishing them all possible success as things are now rather quiet along construction lines.

Tennessee

W. I. Thornton of 295 Adams St., Memphis, is craning a 70-C Bucyrus for Ball & Peters.

The Gulf, Mobile & Northern is now extending its line northerly from Middleton, Tenn., to Jackson, about 40 miles, and contract covering the construction of roadbed, bridge sub-structures, etc., for the first 20 miles north from Middleton has been let to M. O. Wogan, Denver, Colo. Contracts for the remaining 20 miles will be let at an early date. The company will supply the necessary track materials, and will perform all labor necessary to complete the work above the sub grade level. This line is being built on a .6 per cent grade and a maximum curvature of 3 degrees. About one-half of the work is steam shovel work,

and the balance of a lighter character. There will be one bridge consisting of a through truss structure of less than 150-ft. span and a 500-ft. single track tunnel; contract for the tunnel has not yet been awarded.

Texas

M. D. Strickling is track foreman for E. N. Donely on the G. C. & S. F. R. R. at Lometa. He tells us they are operating a Bucyrus 95-C shovel in a gravel pit. This shovel, in one hour and four minutes, dug 1,000 cu. yds. of gravel.

Utah

News From Salt Lake City

BY F. W. SCHUMACHER

The Christensen Construction Company have started their Bucyrus class-14 dragline and a 40-R to work building the new dyke at Garfield, Utah for the Utah Copper Company.

The Christensen Construction Company and L. R. Wattis Company have taken over part of the Utah Construction Company's contract for the construction of about 55 miles of double track for the Union Pacific R. R. Co., between Sherman Hill and Table Rock, Wyo.

West Virginia

Our good friend, H. H. Hunter, is operating a 40-R. Bucyrus for the Acme Limestone Co. at Ft. Spring. His son is craning for him. Mr. Hunter says that the 40-R. is a peach in rock. They are getting along splendidly.

Wisconsin

R. J. Doyle, who until recently has been operating an Osgood "merry-go-round" for the General Contracting Co. of Cleveland, has accepted a position with Grant Smith Co. at Cedar, on the C. & N. W. He is going to operate a Model 91 Marion. Mr. Doyle started in the shovel game when he was 14 years old, firing a shovel for his father, and has been in practically every big shovel camp from the Pacific to the Atlantic.

Wyoming

North Platte News

BY MRS. F. A. MENGEL

On Wednesday of last week the big 2,700 foot tunnel on the Ft. Laramie canal broke through from opposite end completing the tunnel, and so close were the calculations of the engineers that there was a variation of only a one-eighth inch in the center line. The elevations for grade were wrong just 3-16 of an inch, which shows some pretty close work for that distance. This tunnel is between the Platte River and the Laramie River, through the high point of hills.

Winston Camp

Mr. W. A. Winston has returned to camp after an enjoyable trip through the South.

Messrs. W. O. Winston, Chas. Wittaker, and Oakes from the main office in Minneapolis have returned home after looking over the new work to be let in April.

Mr. and Mrs. Scott Fisher are the proud owners of a Studebaker roadster.

Howard Mann is very busy nowadays building a place to put the new kitchen cabinet which has been shipped from Minneapolis.

Winston Bros. have a camp a mile south of Lingle bridge, and one just south of A. Southworth's ranch on the south side. They have a pipe line extended from a pumping station on the river to a point southwest of the St. Clark place, where they have a supply tank from which they pipe the water to their drag lines in both directions from the tank.

Wm. Rohen has left for his home in Minneapolis.

Miss June Wood, a charming young matron of Los Angeles, will be the guest of her sister, Mrs. F. A. Mengel, for the summer.

"Whitie" Conrad is back on the job after the three months vacation in the East. "Whitie" is as fat as ever.

Knowltons Camp

The Knowlton Construction Co. has completed its work near Ft. Laramie and is moving to a point near the turn of the ditch near Mrs. Hays Brown's place in Cheery Creek Valley.

Harry Knowlton has moved his team outfit down to the new work, having completed the Ft. Laramie work.

McArthur Bros. are nearly ready to move camp to Landon Flats.

PROSPECTIVE CONSTRUCTION

California

It is reported that the Western Pacific R. R. is surveying for a line from Modesto to Mendota, about 66 miles, thence through Panoche Pass to Hollister and Monterey, about 42 miles; also for line from Mendota to Fresno, about 30 miles.

Preliminary surveys are being made in Yolo County and Solano County for constructing drainage ditches to drain about 60,000 acres of land east and southeast of Dixon. C. Archibald, Homer G. Brown, and others, of Dixon, are interested.

Canada

It is expected that the Edmonton, Dunvegan & British Columbia Railway, which is being built in Alberta, will soon be extended across the boundary into British Columbia, eventually to connect with the Pacific & Great Eastern Railway at Pouce Coupe, in this Province. The road will open up a large acreage of new country and will greatly assist in the development of eastern central British Columbia.

Georgia

Macon, Ga.—Citizens of Bibb County are contemplating a bond issue of $1,000,000 for use in improving roads in the county, about one mile from Macon City limits on each of the following highways: Forsyth road, Columbus road, Houston road and Cross Keys road, probably concrete paving.

Savannah is planning harbor improvements to cost approximately $2,000,000. W. B. Stillwell, Chairman, Advisory Commission.

Illinois

The Metropolis Belt & Terminal Co. has filed articles of incorporation for construction of a belt line around the city of Metropolis to furnish joint terminals and direct connections with new railroad bridge across the Ohio River. C. H. Middleton is engineer in charge of construction.

Kentucky

It is reported that the Louisville & Nashville R. R. will construct 8 miles of coal-carrying road from Kilday to Seagraves creek, near Harlan and 3 miles of road from Kona Station to Wright.

Louisiana

The Louisville & Nashville R. R. Co. is contemplating an expenditure of about $4,000,000 in protecting its tracks along the gulf coast, between New Orleans and Pascagoula, involving

the rebuilding and raising above high sea line all bridges now in service along the Mississippi Sound.

Missouri

It is reported that plans have been prepared by Alton & Southern R. R. and the Frisco R. R., and Edw. Flad and M. D. Holman, consulting engineers, for improving the river front by reconstructing the levee from Franklin Avenue to Spruce Street, constructing a quay wharf from Market to Spruce Street, establishing several small parks, widening streets, laying additional railroad tracks, drainage of River des Pere, etc.; total cost about $62,000,000. For further information write Geo. R. Tansey, clerk City Plan Commission, St. Louis.

The Chicago, Burlington & Quincy R. R. will probably let contract in March for 46 miles of new line from Moberly Junction, Mo., to Monroe, involving about 20,000 cu. yds. of masonry and 4,000,000 cu. yds. of grading. C. L. Persons, Engineer of Construction, Chicago.

Sealed proposals will be received at the office of the Secretary, Mississippi River Commission, 1311 International Life Building, St. Louis, Mo., until 11:00 a. m., April 9, 1917, for constructing about 259,100 cubic yards of earthwork in the Sny Island Levee Drainage District, Ill. Further information on application.

As soon as the weather permits the Great Northern Ry. will award contracts for the double tracking of its line between Shelby, Mont., and Cutbank, about 24 miles. Other double tracking between Whitefish, Mont., and Columbia Falls will also be undertaken in the near future.

Bids will be received until 2:00 p. m., April 5, by department of Interior, U. S. Reclamation Service, Washington, D. C., for the constructing of laterals on the Flathead project, involving about 285,000 cu. yds. of excavation. Division 18 to 25 miles north of Perma, Mont., another from 9 to 15 miles northeast of Dixon, Mont.

New Jersey

The Board of Public Utility Commissioners, Trenton, N. J., have approved the plans of the Erie R. R. for proposed elimination of grade crossings in Rutherford and in East Rutherford and South Bergen, estimated cost $200,000.

New York

New York Central R. R. Co. is reported as considering elimination of grade crossing at Coffeen Street.

North Carolina

The Henderson & Wilson Ry. has been granted a charter in North Carolina, but has not yet completed its organization. The plans call for building a line from Henderson, N. C., southeast to Wilson, about 55 miles, also extensions. The promoters expect to develop a traffic in farm produce and lumber. The Board of Trade, Henderson, is interested in the project.

The Southern Ry. Co. proposes to double-track its line from Charlotte, N. C., to Spartansburg, S. C., a distance of 72 miles. W. H. Wells, Chief Engineer of Construction, 1300 Pennsylvania Ave., Washington, D. C.

Oklahoma

A charter has been granted the Miami Mineral Belt R. R. Co. capital stock $200,000, for constructing a line 25 miles long in Oklahoma and Kansas beginning at a point near Frisco near Quapaw, Ottawa County, Okla., to Columbus, Cherokee County, Kan., another branch from Columbus to Baxter Springs, Kan. J. A. Frates, Springfield, Mo.; J. H. Grant, Oklahoma City, among incorporators.

Bids will be received until 1:00 p. m., April 5, by Board of County Commissioners, Sequoyah County, Sallisaw, Okla., for the construction of drainage ditches in Sequoyah Drainage Improvement District No. 1, embracing 13 miles of canals, 620,000 cu. yds. of excavation. Winters & Dove, Engineers, Fort Smith, Ark.

Oregon

A line will be constructed from Bend, Ore., to Trinidad, Cal., a few miles north of Eureka, where it is planned to make a junction with the Northwestern Pacific Ry. by the Hill Ry. System.

Washington

Twisp, Wash.—It is announced that the Methow Valley & Eastern Ry. will start construction at an early date on proposed lines from Pateros, on the Great Northern Wenatchee-Oroville branch, to Winthrop, in the Methow Valley, 45 miles. Cost, about $1,500,000. E. Byron Siens, promoter.

West Virginia

The Baltimore & Ohio R. R. Co. will construct a short link between Sago, W. Va., and Hampton, to connect with the Coal and Coke Road, about 2½ miles long. Cost about $100,000.

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Casey walked into the railroad president's office and said: "Me name's Casey. Oi want a pass to Chicago. Oi worruk in the yar-r-ds."

"That's no way to ask for a pass," corrected the president sharply. "You should introduce yourself politely. Come back in an hour and try it again."

At the end of an hour the Irishman came back. Doffing his hat, he inquired:

"Ar-re yez th' president?"

"I am."

"Me name is Patrick Casey. Oi've be'en workin' in th' yar-r-ds."

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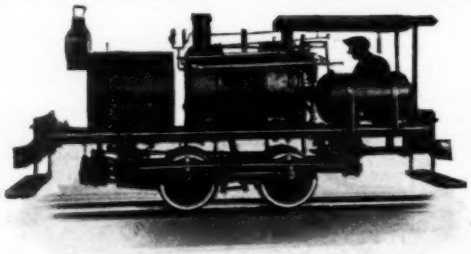

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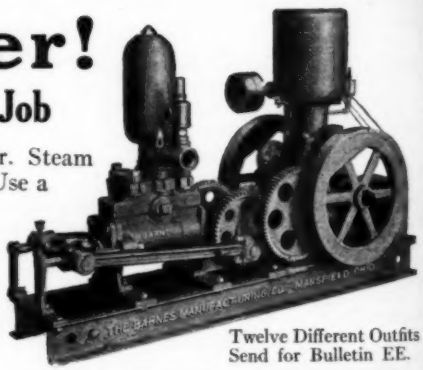

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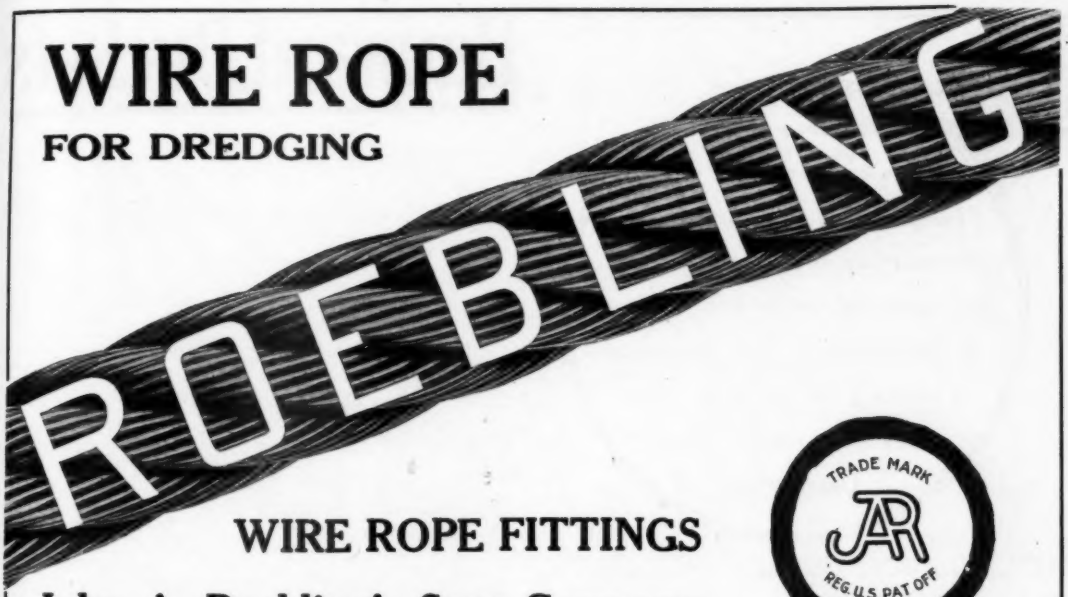

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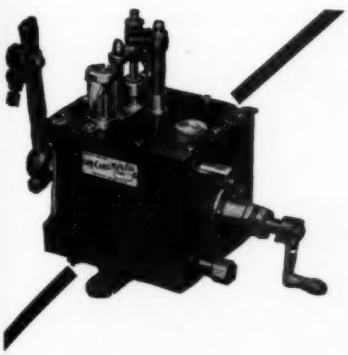

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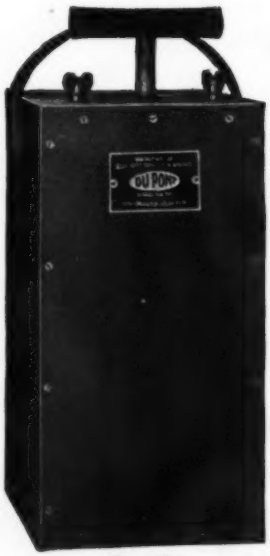

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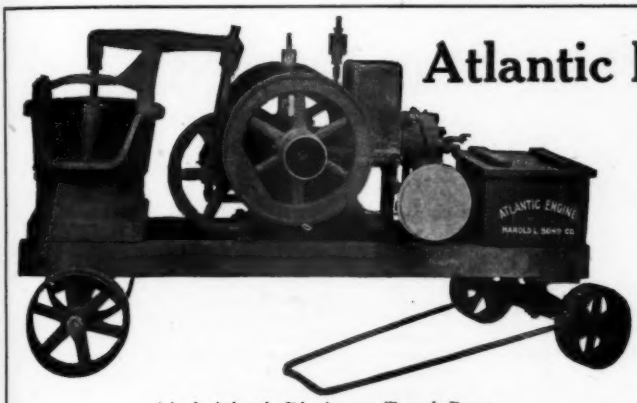

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